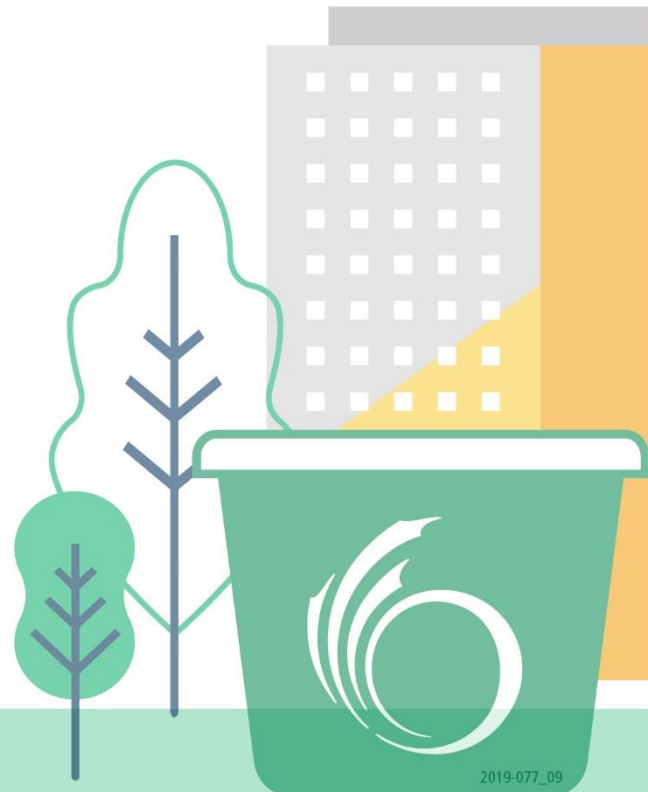




Current State System Summary

EXECUTIVE SUMMARY

Technical Memorandum #1
January 2020





EXECUTIVE SUMMARY

The City of Ottawa has a complex and integrated solid waste management system that maintains public health and supports environmental sustainability. It includes the long-term strategic planning of programs, providing services and facilities for the collection, diversion and disposal of garbage, household organics, recycling, leaf and yard waste and household hazardous waste and the comprehensive management operation and maintenance of City-owned landfills. In addition, there are a number of waste management programs and practices undertaken internally by City departments to ensure items and materials such as waste oil, furniture, biohazards and electronics are diverted from the landfill and/or disposed of properly and safely.

Recognizing the need for an updated comprehensive long-term waste management plan that would set the foundation for future planning and coordinated decision making, the City of Ottawa initiated a process for the development of a long-term Solid Waste Master Plan in 2019. The Solid Waste Master Plan (the Master Plan) will make recommendations based on the 5R's waste management hierarchy of reduction (avoidance), reuse, recycling, recovery and residual disposal. The Master Plan will anticipate future needs of the City and identify options that meet the needs of City customers. It will take a "triple bottom line" approach and recommend policies and programs that are cost-effective, socially acceptable and environmentally sustainable for the long-term. The project is anticipated to be completed by the end of 2021.

The first step in the master planning process is to document the current state of the City's solid waste management system. This includes not only the City services and programs provided to residents and the Industrial, Commercial and Institutional (ICI) customers, but also how the City as a Corporation manages its own waste. Documenting and understanding the baseline waste management system, programs, policies and Corporate practices will allow for the identification of future alternatives for the integrated waste management system to meet the growing needs of the City.

It is important to note that the information presented in the Current State System Summary is accurate only up to the completion of the technical memorandum. New information is continually being generated (systems change, contracts expire, etc.); as such, the document should be regarded as a snapshot in time, current as of January 2020, reflecting information available at that time. It is also important to note that the



document does not include waste generated within the City of Ottawa that is privately managed outside of the City's responsibilities.

Waste Management Legislation and Policy Impacts

In Canada, the responsibility for managing and reducing waste is shared among the federal, provincial and municipal governments.

Broadly speaking, the local governments manage the collection, recycling, composting and disposal of household waste, while the provincial governments establish waste reduction policies and programs, approve and monitor waste management facilities and operations. The federal government complements the role of provinces, territories and municipalities by regulating the international and interprovincial movements of hazardous waste and hazardous recyclable material; identifying best practices that will reduce, as much as possible, the toxic pollution from the management of waste; and providing funding for projects to reduce waste sent to landfills and to improve resource management.

Additional information on legislation and policies relevant to Ottawa's solid waste management system can also be found in the Solid Waste Master Plan's Technical Memorandum #2, Legislative Review.

Waste Generation and Diversion

In 2018, a total of 333,000 tonnes of waste was generated through the collection service programs. Garbage (189,000 tonnes), recyclable material (62,000) and household organics and yard waste (82,000).

In 2018, the City's overall diversion rate was 43%. This percentage included waste material collected from customers participating in the curbside and containerized collection service programs. The curbside waste diversion rate for 2018 was 49%, while the overall waste diversion rate for both multi-residential properties and City facilities in 2018 was 17%. These diversion rates are calculated based on tonnage of material collected.



Financial Overview

The City's waste management programs and services are funded directly through a combination of an annual set user fee rate, general property taxes, revenues and user fees.

The 2020 Solid Waste Services budget indicates that the total gross cost of solid waste services for the City of Ottawa is \$83.3 million in operating costs. Specifically, garbage and landfill/disposal services, long term planning and capital replacement/debt, with a total cost of \$34.6 million, are funded by a flat rate applied to each residential unit. This individual fee is visibly presented on the tax bill.

Waste diversion services, with total costs of \$48.3 million, are funded through the tax base and are based on the value of the property. These services include the collection and processing of recyclables, household organic waste, leaf and yard waste and the Household Hazardous Waste Events. Costs are offset by revenues from recycling markets and from funding received through the Resource Productivity and Recovery Authority.

In 2018, the City's Solid Waste Services Branch had an annual revenue of approximately \$51 million, which included approximately \$6.5 million in funding from provincially funded entities.

The 2020 Solid Waste Services Capital Budget totals \$6.6 million. All of the funding for the capital programs are from the Solid Waste Capital Reserve Fund. However, the fund is in a precarious state and sources of revenue to increase the reserve fund will be explored as part of the Solid Waste Long Range Financial Plan.

Promotion, Education and Outreach

The City offers comprehensive promotion, educational tools and resources to its customers through on-line resources, social media, printed resources, outreach events, educational campaigns and staff resources. In 2018, the City budgeted approximately \$197,000 on communication activities related to solid waste promotion and education.

In 2018, City staff commissioned the global public relations and integrated communications agency, Hill and Knowlton Strategies (H+K), to conduct intensive market research that supported the creation of a comprehensive, evidenced-based communications plan. The study identified waste diverter target audiences by



segmenting the audience into four distinct segments based on waste diversion behavior: Superstars, Aspirational, Inconsistent, and Disconnected.

Existing Waste Collection Systems and Service Standards

The City of Ottawa collects waste materials from the residential sector, including multi-residential properties, public spaces and City parks, special events and a portion of the Industrial Commercial and Institutional (ICI) sector. Although the City has no statutory role to play in waste collection and waste diversion from the ICI sector, it does provide collection services for some ICI establishments. This includes City facilities, places of worship and small businesses registered under the City's Yellow Bag Program and schools participating in the Green Bins Program.

The City's recycling collection service is a dual material stream program: glass-metal-plastic (GMP) and fibre streams. Each stream has dedicated colored containers, pending the collection service type and the material streams are collected separately.

The collection service is set up in a way that the material from the residential sector and the non-residential sector is collected together to optimize operational efficiencies and cost.

All waste material managed by the City of Ottawa is processed and/or disposed of within City limits.

The City provides uniform collection services, 5 days per week, based on property type and the container used to set out waste material for collection. These services are delivered through the curbside and containerized waste collection service programs.

Curbside Collection Service Program

The curbside collection service program provides collection of garbage, recyclable material, household organic waste and leaf and yard waste, at a location, which is at or near the curb and/or a shared common area/pad. The curbside collection service collects garbage from garbage bags and/or garbage cans and recyclables are placed in a blue box or black box. Household organics is collected from a green bin and leaf and yard waste is collected from a green bin, paper yard waste bag, reusable container or for branches can be tied and bundled. Bulky items are collected with garbage.

Approximately 294,000 properties are serviced under the curbside collection program, including residential properties, City facilities and small ICI establishments.



Current curbside service levels were established by City Council in April 2011 and include:

- Material is collected five days per week;
- Uniform residential curbside collection service levels provided across the City (urban, suburban and rural);
- Biweekly collection of garbage;
- Biweekly collection program for diapers and incontinence products (Special Consideration Items), alternating with garbage collection;
- Biweekly collection of blue and black bins on alternating weeks;
- Weekly collection of green bins, year-round; and,
- Weekly collection of leaf and yard waste.

The current curbside collection contract began on October 26, 2012 and will terminate on May 31, 2020. A new short-term, three-year collection contract begins on June 1, 2020 and will continue until May 31, 2023. In the Spring of 2019, Council approved staff's recommendation to enter into a short-term three-year contract in order to allow time for the provincial legislative framework related to the shift to full producer responsibility for the Provincial Blue Box Program, be clarified. Furthermore, the short-term contract would allow the community and Council adequate time to establish a vision, objectives and targets for the Solid Waste Master Plan, so that future curbside collection options to be considered in the next collection contract align with the strategic direction of the City's Solid Waste Master Plan and include comprehensive community consultation.

Containerized Collection Service Program

The containerized collection service program provides collection of garbage from a front-end loading container and recyclable material from a front-end loading container or 360 litre recycling cart. Both the containers and carts are collected using a front-end loading truck. Properties serviced under this program have their bulky items, household organics and leaf and yard waste collected under the curbside collection service program.

Approximately 1,940 properties are serviced under the containerized collection program which includes multi-residential properties with 6 units or more (1,700) as well as City facilities (240).



Current containerized collection service levels were established by City Council in April 2011 and include:

- Weekly collection of garbage;
- Once per week collection of recyclable material;
- Biweekly collection of bulky items (serviced under the curbside program);
- Collection of Christmas trees (serviced under the curbside program);
- Weekly curbside collection of yard waste (serviced under the curbside program); and,
- Weekly collection of household organics (serviced under the curbside program).

The current containerized collection contract began on June 1, 2014 and will terminate on May 31, 2020. A new five-year containerized collection contract was developed and awarded. The start date of this contract is June 1, 2020 and the end date is June 1, 2025, with the option to extend the period of contract for two additional one-year terms. This new contract includes the following changes:

- The collection of garbage in 360 litre carts. With the addition of 360 litre garbage carts, properties that were not able to participate in the City's municipal waste collection program due to limited storage space for garbage containers will now be able to.
- The collection of bulky items from multi-residential properties receiving containerized garbage collection was moved from the curbside collection contract and added as a responsibility under the new containerized collection contract. Bulky item tonnages and real costs will be determined for those multi-residential properties under the containerized collection program.
- The collection of green bins from multi-residential properties receiving containerized collection was moved from the curbside collection contract and was added to the containerized collection contract. The contractor, under the new contract, upon agreement of the property owner, will be required to move green bins from a storage area to the collection location at no cost to the property owner. This enhancement will remove the need for properties to set the green bin to the edge of the property for collection. Under the new collection contract, properties will no longer have to bring the green bin to the edge of the property for collection.



Public Space Collection Services

The City provides waste collection services in public spaces. This gives the general public (residents, visitors and tourists) the opportunity to dispose of waste in the proper way and improve diversion.

The City collects from approximately 750 on-street waste receptacles across the City. The collection is divided into two zones: Restricted Advertising Area (RAA) and Unrestricted Advertising Area (UAA). The RAA is defined as the core area of the City, traditional main streets and the Business Improvement Areas. In the RAA, there is no commercial advertising allowed on the waste receptacles. The UAA is defined as all areas outside the RAA and allows for commercial advertising on the waste receptacles.

The City collects from approximately 5,400 garbage bins in City parks. Solid Waste Services is currently undertaking a one-year City parks organic and recycling pilot project, where green bins are co-located with recycling and garbage receptacles in 10 parks across the City. The pilot will end November 2020, at which time, staff will evaluate the effectiveness of the pilot.

Garbage collection for all special events is the responsibility and the expense of the event organizer. Green bins and clear stream recycling frames are only supplied by the City for smaller events that take place on City property. For larger events such as the Dragon Boat Festival, there is currently no requirement for recycling/diversion as part of the events permit. However, the use of recycling stations and organics collection is strongly encouraged through the comprehensive event guide that the City's Event Central provides to registries. The event guide also outlines best practices and tips for greening an event and several events already have sustainability programs in place.

Corporate Solid Waste Management Practices

There are approximately 375 City facilities comprised of recreation facilities, community centers, daycares, client service centers, long-term care homes, libraries, works yards, emergency service stations/posts and transit facilities and garages.

While Solid Waste Services is responsible for the collection, processing and disposal of the typical waste streams (garbage, recyclables, household organics and leaf and yard waste) from City facilities, there are additional waste streams that are generated and managed by other City departments under separate waste management programs,



contracts and services, These materials include electronic equipment such as computers, waste oil, used filters, antifreeze and used tires from fleet vehicles; surplus office furniture, hazardous materials used by City facilities such as pool chemicals, uniforms as well as medical supplies and equipment.

Waste Diversion Programs

Residents of the City have access to several waste diversion programs to further divert waste from landfill. These include the Household Hazardous Waste Events, Take It Back! Program, Waste Electrical and Electronic Equipment (WEEE) Program, Used Tires Program and Give Away Weekends.

There are approximately eight one-day mobile events held each year and are located at various locations across the City. In 2019, the City of Ottawa hosted nine events. Each event is attended by approximately 2,200 vehicles and costs approximately \$1.3 million per year with about \$425,000 of funding provided through industry stewards.

The management and funding structure for the Municipal Hazardous Waste Program, the WEEE Program as well as the Blue Box Program are currently under review through the Waste Free Ontario Act and full producer responsibility. The Ministry of Environment, Conservation and Parks (MECP) is currently in the process of drafting new regulations for these programs. The new regulations will outline producers' responsibilities with regards to ensuring designated materials are collected. Once the regulations are released, the City will have to determine its level of involvement in the collection of these materials. Additional information on legislation related to producer responsibility can be found in the Solid Waste Master Plan's Technical Memorandum #2, Legislative Review.

Waste Disposal

The City currently has no contractual relationships or obligations with any of the local private sector landfill facilities or transfer stations.

The City owns the Springhill Landfill and the accompanying Environmental Compliance Approval (ECA) for the site. Tomlinson Waste Management (TWM) operates the Springhill Landfill on behalf of the City. Effective, July 1, 2016, the City stopped tipping municipal curbside garbage at the site and in 2018, the MECP identified significant groundwater and surface water contamination that put the site out of compliance with the ECA. The City amended the ECA to temporarily suspend waste placement



activities, effective May 4, 2018 and submitted a long-term Remediation Action Plan to the MECP to remediate the site through a capping solution.

The Trail Waste Facility (TWF) is a key City asset – a state of the art landfill that employs innovative technologies and methods and is operated above industry standards.

The TWF has an approved capacity of 16.9 million cubic meters, with 5.8 million cubic meters remaining. It is permitted to accept solid, non-hazardous waste generated within the boundaries of the City of Ottawa. The Minister approved the Environmental Assessment to expand the Trail Waste Facility in June of 2005 and depending on the extent of diversion from the landfill in the future, the current estimated end of life is 2041.

The TWF has a net operating cost of approximately \$6.5 million per year with offsetting revenues of approximately \$4.3 million.

Leachate is currently pre-treated at the facility. It is then tested to ensure that it meets the City's Sewer Use By-law and is then trucked to the City's wastewater treatment processing facility (ROPEC) for further treatment. A full scale on-site permanent leachate treatment facility is currently being designed. This facility will treat leachate to a very high quality and then discharge the treated water to the Jock River.

At the TWF, landfill gas is managed to reduce odours and prevent off-site migration in the ground beyond the TWF's property boundary. It is collected through a highly engineered gas collection system. Landfill gas is managed by the Agreement-holder, PowerTrail Inc. PowerTrail Inc. uses the landfill gas collected at the TWF to power six 1 megawatt internal combustion reciprocating engines and produces approximately six megawatts of electricity, which is enough to power 6,000 homes in Ottawa. Through the agreement with PowerTrail Inc., the City earns a royalty based on the sale of electricity generated at the landfill gas utilization facility.

The Trail Waste Facility accepts and beneficially reuses solid non-hazardous waste soil generated within the City of Ottawa. This includes any projects from the private and commercial sector as well as from the City's infrastructure and roads projects.

The Trail Waste Facility is operated and maintained in accordance with Certificates of Approval (C of A) issued by the Ministry of Environment Conservations and Parks. As



conditions to these C of A's, the City is subject to ongoing monitoring and compliance programs and conducts an annual environmental monitoring program to document groundwater, surface water and operational conditions on and around the site.

Waste Processing

The City manages the processing of recyclable material, household organics and leaf and yard waste.

Recyclable Material Processing

The City's processing and marketing of recyclables is currently contracted to one service provider, Cascades Recovery+. Cascades Recovery+ processes and sorts the City's recyclable material into different products and markets the material monthly to the highest bidder. The City retains all revenues from the sale of recyclables.

In 2018, a total of 57,000 tonnes of recyclables was marketed by Cascades Recovery+: 38,000 tonnes of residential Black Box material and 19,000 tonnes of residential Blue Box material by with approximately 5,000 tonnes of contamination.

Recycling markets have fluctuated for decades, with commodity pricing trends being labelled as "volatile" due to the large annual swings. Recently, there have been a combination of forces that are impacting the marketing of recyclables and putting greater than usual pressure on commodity pricing. These include:

- Market forces, such as China's ban on imported waste material;
- Closure of several North American recycling facilities;
- New types of packaging introduced by producers are increasing the material complexity, which introduces sorting challenges and higher contamination and/or residual rates;
- Problematic materials, such as polystyrene or multi-layered materials, foster confusion as to whether they are recyclable or not in their local program; and,
- The decline of newsprint tonnages.

In 2018, the City received approximately \$8.3 million in revenue for marketed recyclable material. The paper-cardboard material marketed by Cascades Recovery+, generated a revenue of \$3.5 million and glass-metal-plastic material generated a revenue of \$4.8 million from the sale of recyclables; 42% and 58% of the revenue, respectively.



For the City of Ottawa, market demand for fibre material and pricing for fibre has dropped significantly in the past five years and the amount of glass-metal-plastic material collected and marketed has increased by 30% over the same period, despite the abundance of lighter weight materials such as plastic bottles. Part of this is due to the increased availability of plastic packaging and part is due to huge upgrades to the City's contracted processing facility, leading to an increase in the capture of materials.

Source Separated Organics and Leaf and Yard Waste Processing

The City's household organic waste, leaf and yard waste, as well as Christmas trees are processed and marketed under a contract with Renewi Canada Ltd, formally Orgaworld Canada Ltd., through a twenty-year contract, which ends in 2030. The Renewi facility uses an indoor tunnel composting system for both leaf and yard waste material and source separated organics.

On March 28, 2018, Council approved a contract settlement to resolve legal disputes between the City and Renewi. This resulted in an amended and restated contract that was signed July 5, 2018. As part of the settlement agreement, Council also approved enhancements to the Green Bin program for residents at a better value for taxpayers. These enhancements included:

- Reducing the 'put-or-pay' tonnage from 80,000 tonnes to 75,000 tonnes per year;
- Replacing the 540 tonne daily limit for processing organics with a 2,700 tonne weekly limit, providing the City with more flexibility to manage what it delivers; and,
- Expanding the Green Bin program to permit residents to add plastic bags as an organic bagging option and dog waste to the weekly collection.

Currently, the majority of LYW is processed at Renewi's facility to meet the put or pay requirements. However, during peak LYW seasons, when the amount of LYW collected may exceed the processing facilities weekly limit, the excess LYW is taken to the Trail Waste Facility. In 2018, 76,580 tonnes of household organic waste and yard waste was processed at Renewi while 5,000 tonnes of leaf and yard waste was processed at the TWF.

Next Steps

As previously described, this Technical Memorandum #1 was part of Phase 1 of the Solid Waste Master Plan. The purpose of this deliverable is to document the existing



reduction, reuse, collection, processing, disposal and financial systems used to manage the waste in the City. This baseline will be used as the foundation upon which to base future programs, policies and facilities.

The next step in the process will be the development of Phase 2, *Where We Are Going?* which will help to continue building the foundation. This next step will document the needs assessment and establish the vision and guiding principles that will guide the implementation of the Master Plan in the future.